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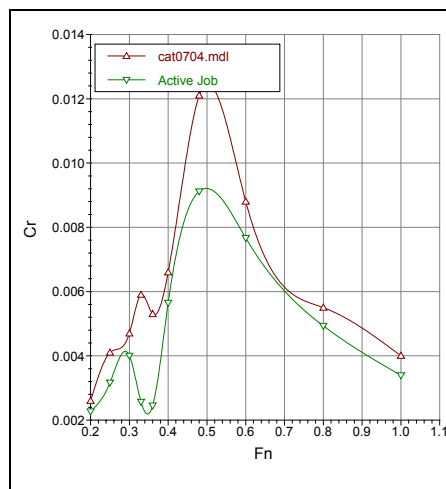
## Catamaran Analysis in NavCad 2004

*HydroComp has developed a catamaran interference drag prediction model for NavCad 2004. This report presents a brief validation of the method.*

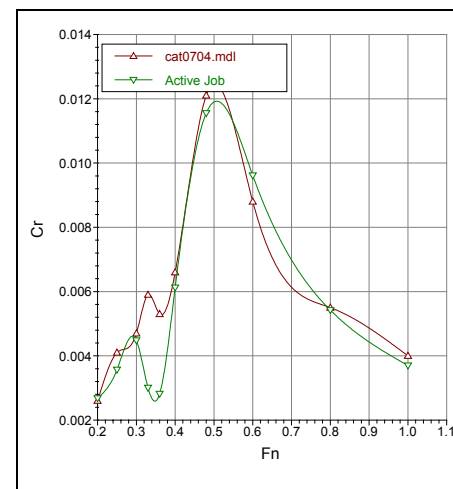
Predicting drag for catamarans has long been a challenge for marine designers as they struggle with the hydrodynamic effects of *interference* – those changes in drag when hulls are in close proximity to each other. To address the need for a reliable and useable tool to predict catamaran resistance, HydroComp has recently developed an *interference drag prediction model* based on the methodology proposed by Insel & Molland.

Implemented in *NavCad 2004*, this approach builds on NavCad's large collection of bare-hull prediction methods with a new prediction model for viscous and wake-making interference factors. The numerical algorithms for these interference factors were developed through investigation of model tests, CFD analyses, and full-scale trials.

The first plot below illustrates a prediction of the residuary resistance coefficient for the bare-hulls alone (i.e., without interference). The predicted  $C_R$  curve (in green) is compared to a model test of the catamaran (in red). The second plot illustrates the excellent accuracy attained when the new interference drag prediction model is applied.



$C_R$  prediction without interference model



$C_R$  prediction with interference model

Please contact HydroComp for additional information about NavCad 2004. Celebrating its 20<sup>th</sup> year, HydroComp provides software products and consultancy services for the performance analysis and design of marine vehicles to industry, research and government clients. Currently more than 500 marine professionals in over 45 countries are using HydroComp's award-winning marine propulsion software.

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